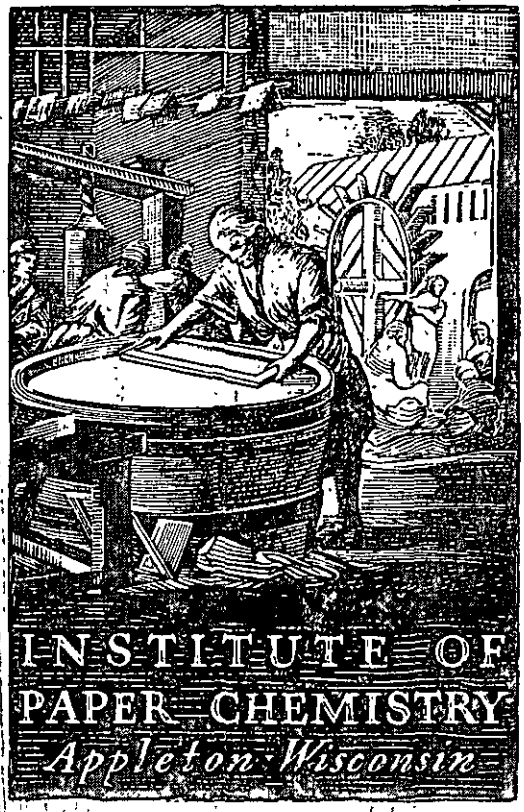


CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 127

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

February 1, 1958

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

CONTINUOUS BASELINE STUDY

Project 1108-13

Progress Report 127

to

FOURDRINIER KRAFT BOARD INSTITUTE, INC.

February 1, 1958

THE INSTITUTE OF PAPER CHEMISTRY

Appleton, Wisconsin

In conjunction with the F.K.I. Continuous Baseline Study, The Institute of Paper Chemistry has been directed to identify the participating mills by means of a scrambled system of code letters. Under this system, which was initiated in Progress Report 105, each mill is identified by a code letter different from that used for the previous month.

During the month of January, eighty-one different sample lots of 42-lb. Fourdrinier kraft linerboard from fifteen different F.K.I. mills were processed at The Institute of Paper Chemistry. A tabulation of the number of samples classified according to mill may be seen in Table I.

TABLE I

DISTRIBUTION OF 42-LB. LINERBOARD SAMPLES

Mill Code	Samples Submitted
A	8
B	0
C	3
D	3
E	0
F	7
G	10
H	1
I	2
J	10
K	0
L	6
M	5
N	9
O	7
P	3
Q	3
S	4
Total	81

These sample lots were tested for basis weight, caliper, bursting strength, and Elmendorf tear. The average strength results for each mill may be seen in Table II and are graphically presented in Figures 1 to 5. In addition to a comparison of the mill averages for the various tests, Table II also shows the current F.K.I. averages, the cumulative F.K.I. averages, and the F.K.I. indexes. The cumulative F.K.I. average is based on the results for the previous twelve months excluding the current period. Hence, in the case of the current report, it covers the period from January 1, 1957 to December 31, 1957. The F.K.I. indexes are obtained as follows:

$$\frac{\text{current F.K.I. average}}{\text{cumulative F.K.I. average}} \times 100 = \text{F.K.I. index (\%)}$$

The F.K.I. index provides a ready means of comparing the current quality with previous results. For example, the current F.K.I. average basis weight is 43.2 lb., and the cumulative F.K.I. average basis weight is 43.1 lb. Hence, the F.K.I. index for basis weight determined in percent as indicated above is 100.2% and signifies that the current average basis weight is slightly higher than the cumulative average.

A comparison of the results in Table II and Figure 1 shows that the average basis weight results for all mills conform to the 42-lb. specification set forth in Rule 41. Mill H had the highest average basis weight, 45.0 lb. or approximately 7.1% higher than the 42-lb. specification. Mill Q had the lowest average basis weight of 42.2 lb., which was approximately 0.5% higher than the 42-lb. specification.

The amount by which the mills vary from the 42-lb. specification is as follows:

Mill Code	Per Cent
A	+3.6
B	--
C	+3.1
D	+1.7
E	--
F	+3.6
G	+2.9
H	+7.1
I	+2.9
J	+1.9
K	--
L	+1.2
M	+2.4
N	+3.3
O	+3.8
P	+2.1
Q	+0.5
S	+1.9

A comparison of the average basis weight data for the previous period with the current F.K.I. average indicated that the basis weight results have decreased slightly from 43.4 lb. to 43.2 lb.

A comparison of the average caliper values for the various mills (see Figure 2) shows that the current mill averages varied from a low of 12.2 points for Mill M to a high of 13.5 points for Mill H. The current F.K.I. average is 12.8 points, slightly higher than the cumulative F.K.I. average of 12.7 points, as indicated by the F.K.I. index of 100.8%.

The average bursting strength values obtained for each mill are graphically presented in Figure 3. It may be observed in Table II and Figure 3 that the current mill averages for bursting strength ranged from

a low of 103 for Mills C and H to a high of 129 for Mill Q. The current F.K.I. average bursting strength is 111 p.s.i. g., which is the same as the cumulative F.K.I. average.

A graphic comparison of the Elmendorf tear results for the various mills is given in Figures 4 and 5. The data of Table II show that Mill M had the highest average machine direction tear value of 388 g./sheet, and that Mill C had the lowest value of 285 g./sheet. It may be further noted in Table II that Mill M had the highest cross-machine direction tear value of 416 g./sheet and that Mill C had the lowest value of 335 g./sheet. It may be noted also that the current F.K.I. averages for machine and cross-machine direction tear are slightly higher than their respective cumulative F.K.I. averages.

A comparison of the F.K.I. indexes indicates that, for the current period, the current F.K.I. averages for basis weight, caliper, machine and cross-machine direction Elmendorf tear are slightly higher than the corresponding cumulative F.K.I. averages and the current F.K.I. averages for bursting strength is the same as the cumulative F.K.I. average.

In order to compare the variation within a given mill, the test results for each particular mill have been tabulated in Tables III to XX for Mills A and S, respectively.

The results obtained on special drum stock are presented in Table XXI.

In addition to the current and cumulative average, the mill factor and mill index are given for each mill. The cumulative mill average is the

average test result obtained on the samples submitted by the particular mill for the previous twelve months excluding the current period. The mill factor and the mill index are obtained as follows:

$$\frac{\text{current mill average}}{\text{cumulative mill average}} \times 100 = \text{mill factor (\%)}$$

$$\frac{\text{current mill average}}{\text{cumulative F.K.I. average}} \times 100 = \text{mill index (\%)}$$

The mill factor and the mill index are a convenient means for comparing the current mill results either with the previous results for that particular mill or with the cumulative F.K.I. results. The reports also present a comparison of the test data obtained at the mills with test data obtained at The Institute of Paper Chemistry. These test data are presented and discussed on subsequent pages of this report.

It may be noted in Tables III through XXI that the test data include information about the sheet finish. The summarized results for the mills which submitted sample lots during the current period are as follows:

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
A	7, 1[a]		
B	No samples submitted.		
C	3		
D	1		2[b]
E	No samples submitted.		
F	7		
G	10		
H	1[a]		
I	2		
J	10		

(Continued on the following page)

Mill Code	No. of Sample Lots W.F.	D.F.	Misc.
K	No samples submitted.		
L	6		
M	5		
N	9		
O	7		
P	3[a]		
Q	3[a]		
S	4		
R[c]	No samples submitted.		

[a] One side only.
[b] Natural.
[c] Drum linerboard.

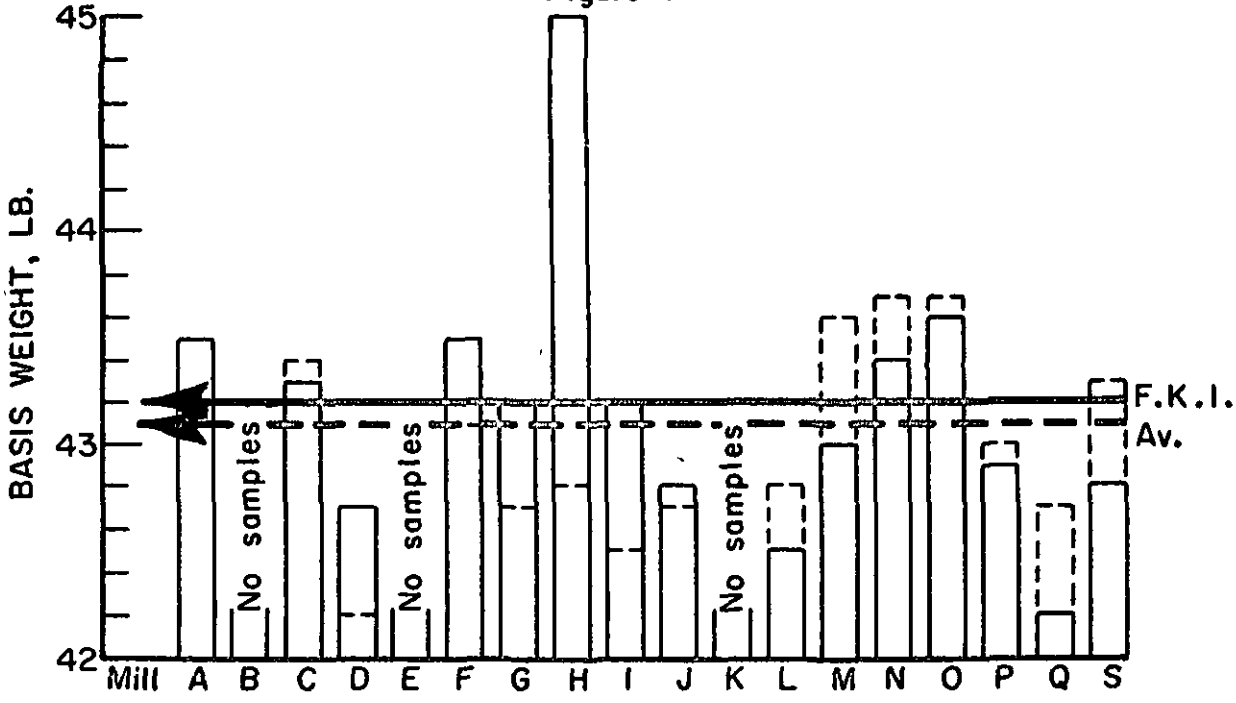
The results indicate that the majority of the participating mills are using a water finish on their 42-lb. linerboard.

TABLE II

SUMMARY OF COMPOSITE MILL AVERAGES--JANUARY 1 THROUGH JANUARY 31, 1958

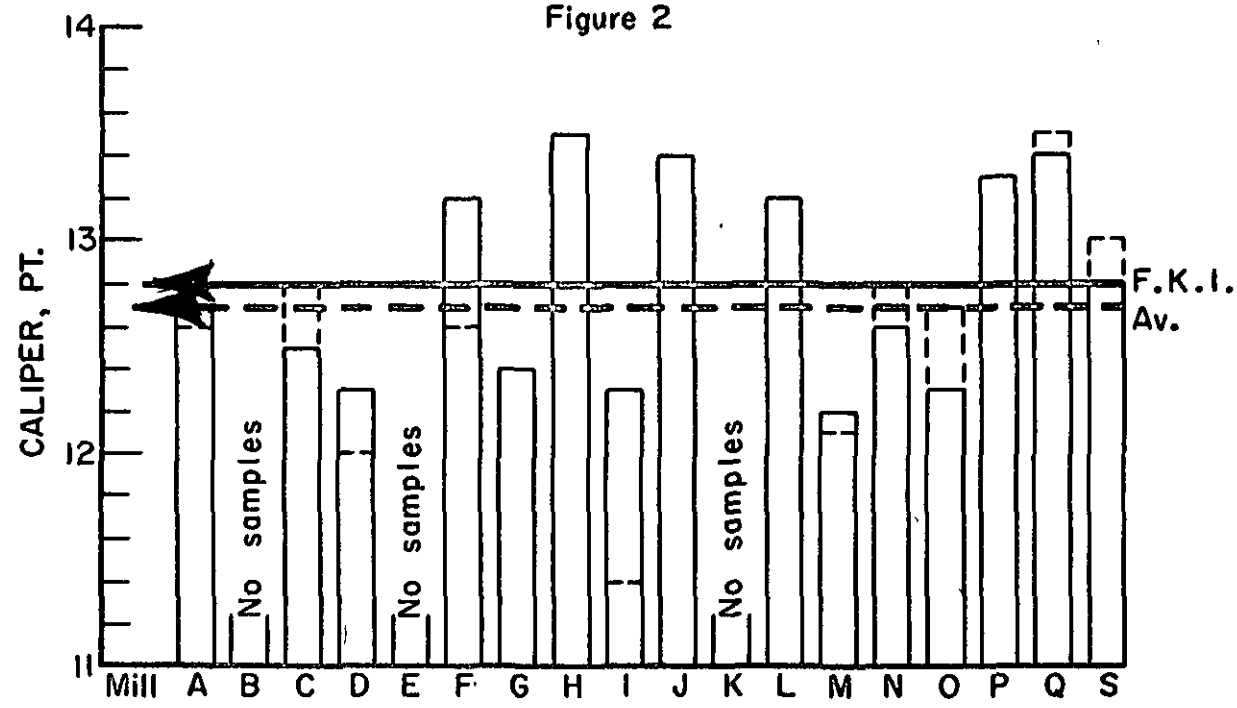
Mill	Basis Weight, lb.	Caliper, points	Bursting Strength, p.s.i. gage	Elmendorf Tear, g./sheet In Machine	Elmendorf Tear, g./sheet Cross Machine
A	43.5	12.7	113	322	378
B	No samples submitted during the past 12 months.				
C	43.3	12.5	103	285	335
D	42.7	12.3	111	316	369
E	No samples submitted.				
F	43.5	13.2	113	371	398
G	43.2	12.4	108	312	347
H	45.0	13.5	103	324	373
I	43.2	12.3	109	372	388
J	42.8	13.4	116	297	367
K	No samples submitted.				
L	42.5	13.2	112	358	376
M	43.0	12.2	109	388	416
N	43.4	12.6	107	325	353
O	43.6	12.3	115	353	384
P	42.9	13.3	108	317	368
Q	42.2	13.4	129	348	382
S	42.8	12.8	108	360	388
Current FKI Average:	43.2	12.8	111	337	375
Cumulative FKI Average:	43.1	12.7	111	334	372
FKI Index, %	100.2	100.8	100.0	100.9	100.8

Figure 1



COMPARISON OF BASIS WEIGHT RESULTS
(Period Jan. 1 - Jan. 31, 1958)

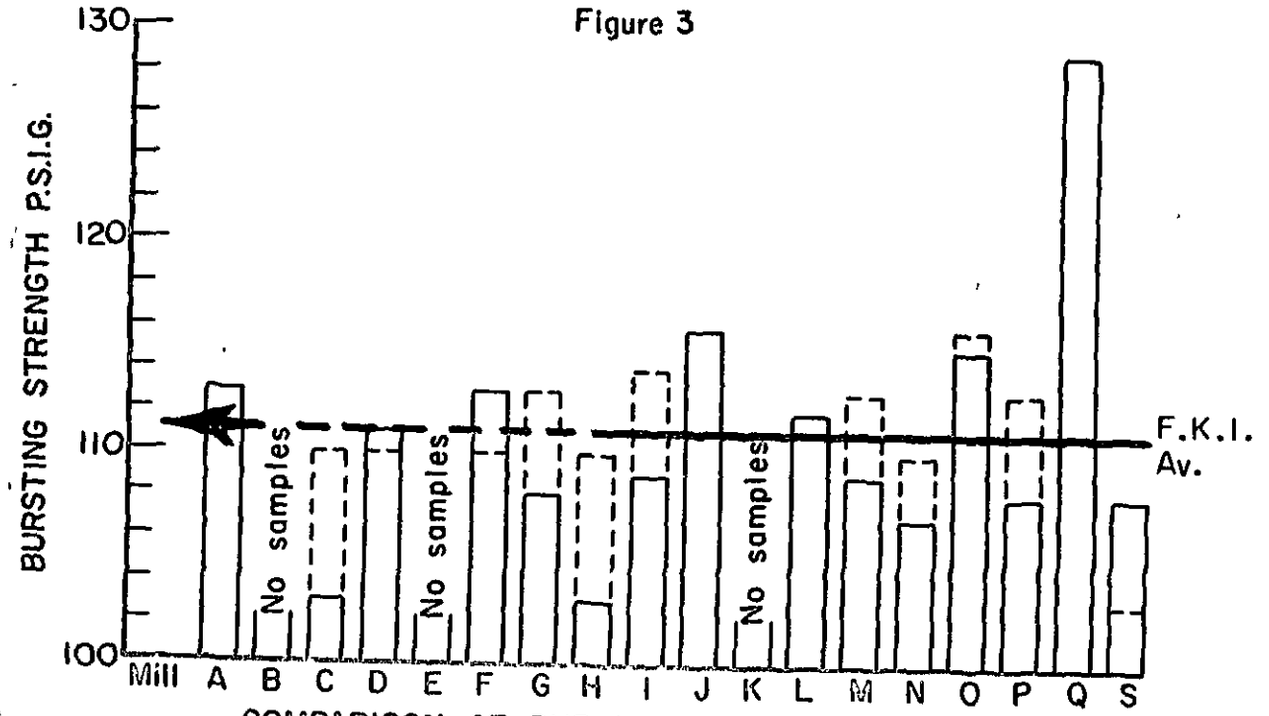
Figure 2



COMPARISON OF CALIPER RESULTS
(Period Jan. 1 - Jan. 31, 1958)

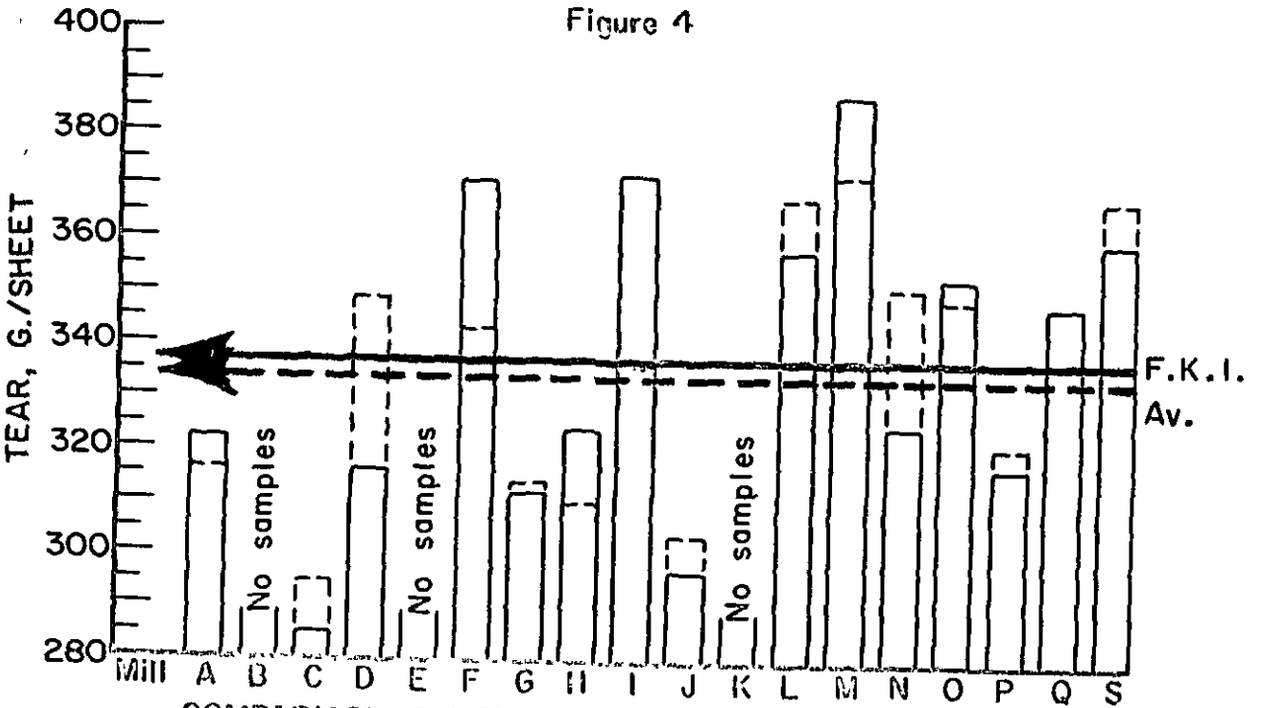
——— Current mill average
- - - - - Cumulative mill average

Figure 3



COMPARISON OF BURSTING STRENGTH RESULTS
(Period Jan. 1 – Jan. 31, 1958)

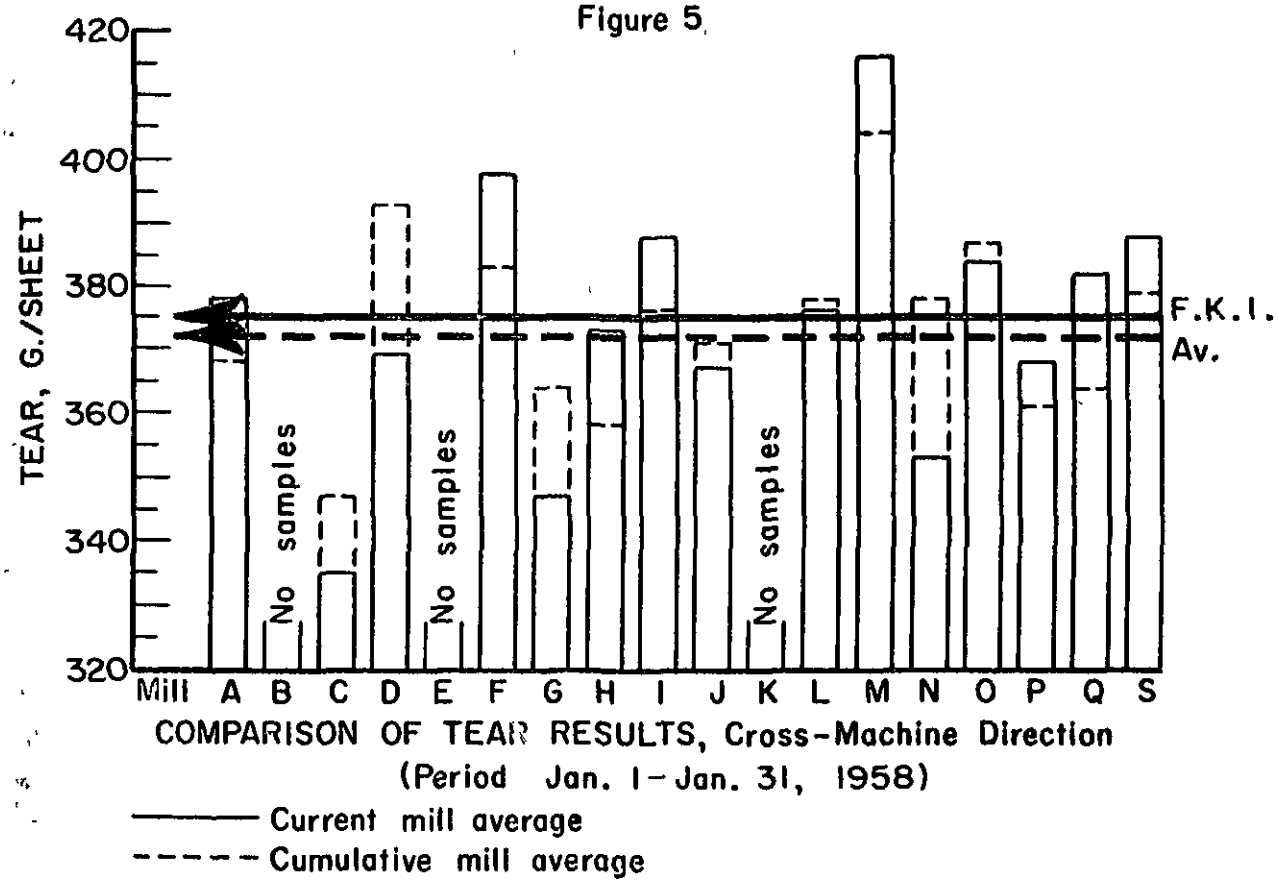
Figure 4



COMPARISON OF TEAR RESULTS, Machine Direction
(Period Jan. 1 – Jan. 31, 1958)

——— Current mill average
– – – – – Cumulative mill average

Figure 5



COMPARISON OF TEAR RESULTS, Cross-Machine Direction
(Period Jan. 1 - Jan. 31, 1958)

——— Current mill average
- - - - - Cumulative mill average

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958

TABLE III

MILL A -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176482	WFLS	1/ 2/58	12/13/57	2	44.2	42.4	43.5	13.1	12.1	12.6	137	100	120	376	304	337[a]	448	376	396[a]
176556	W.F.	1/ 9/58	1/ 2/58	1	43.8	42.8	43.4	13.8	12.6	13.1	129	79	109	392	272	332[a]	416	336	379[a]
176557	W.F.	1/ 9/58	1/ 2/58	1	44.0	43.2	43.5	13.9	12.7	13.3	121	86	103	360	272	315[a]	392	352	372[a]
176637	W.F.	1/13/58	1/ 5/58	2	44.2	42.6	43.8	12.8	12.1	12.4	152	106	125	400	264	321[a]	416	344	383[a]
176638	W.F.	1/13/58	1/ 6/58	2	44.0	42.6	43.6	12.9	12.2	12.5	136	102	118	328	256	297	392	336	373[a]
176759	W.F.	1/23/58	1/12/58	2	44.2	42.6	43.8	13.2	12.2	12.7	137	100	116	360	280	317	416	360	385[a]
176760	W.F.	1/23/58	1/13/58	2	43.8	42.4	43.4	12.9	11.6	12.3	131	88	111	352	296	327[a]	392	320	365[a]
176761	W.F.	1/24/58	1/20/58	1	44.0	42.8	43.3	13.2	12.4	12.9	132	73	104	384	296	331[a]	400	352	375[a]
Current Mill Average							43.5			12.7			113			322			378
Cumulative Mill Average							43.5			12.6			113			316			368
Mill Factor, %							100.0			100.8			100.0			101.9			102.7
Mill Index, %							100.9			100.0			101.8			96.4			101.6

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE IV

MILL B -- 42-LB. LINERBOARD

Mill No.	Finish	Date Recd	Date Made	Set No.	Basis Weight, lb. Max.	Min.	Av.	Caliper, points Max.	Min.	Av.	Bursting Strength, p.s.i. gage Max.	Min.	Av.	Elmendorf Tear, g./sheet In Max.	Min.	Av.	Across Max.	Min.	Av.
No samples submitted.																			

TABLE V

MILL C -- 42-LB. LINERBOARD

176554	W.F.	1/ 9/58	11/25/57	1	43.8	41.8	43.1	13.0	12.2	12.6	119	80	103	336	232	280	360	304	330[a]
176555	W.F.	1/ 9/58	12/ 7/57	1	44.0	41.8	43.2	13.0	12.0	12.6	118	81	100	288	232	261	384	296	334[a]
176654	W.F.	1/14/58	12/10/57	1	44.0	42.6	43.5	12.8	12.0	12.4	126	90	107	368	272	315	360	320	341[a]
Current Mill Average							43.3			12.5			103			285			335
Cumulative Mill Average.							43.4			12.8			110			295			347
Mill Factor, %							99.8			97.7			93.6			96.6			96.5
Mill Index, %							100.5			98.4			92.8			85.3			90.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE VI

MILL D -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176505	W.F.	1/ 6/58	12/27/57	2	44.2	41.6	42.7	12.8	11.8	12.2	122	93	109	360	304	325[a]	400	344	373[a]
176553	Nat.	1/ 9/58	1/ 4/58	2	44.0	41.6	42.4	12.7	11.6	12.1	127	94	113	336	264	301[a]	384	328	354[a]
176655	Nat.	1/15/58	1/ 6/58	2	44.0	42.0	43.1	13.6	12.0	12.6	127	84	111	368	272	323[a]	424	344	379[a]
Current Mill Average							42.7			12.3			111			316			369
Cumulative Mill Average							42.2			12.0			110			349			393
Mill Factor, %							101.2			102.5			100.9			90.5			93.9
Mill Index, %							99.1			96.9			100.0			94.6			99.2

TABLE VII

MILL E -- 42-LB. LINERBOARD

No samples submitted.

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE VIII

MILL F -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176642	W.F.	1/13/58	12/15/57	2	43.4	42.2	42.7	13.8	13.0	13.3	130	83	108	424	296	365[a]	432	344	387[a]
176702	W.F.	1/20/58	1/ 1/58	2	44.0	43.2	43.7	13.5	12.8	13.1	141	84	114	400	304	363[a]	480	368	424[a]
176703	W.F.	1/20/58	1/ 2/58	2	44.6	43.6	43.9	13.3	12.8	13.0	148	85	115	456	336	373	456	344	397[a]
176704	W.F.	1/20/58	1/ 5/58	2	44.4	43.6	44.0	13.2	13.0	13.1	143	92	116	416	320	370	464	368	412[a]
176705	W.F.	1/20/58	1/11/58	2	44.0	43.6	43.9	13.1	12.8	13.0	152	88	118	440	328	370	432	336	393[a]
176839	W.F.	1/23/58	1/13/58	2	43.8	42.2	43.1	13.8	13.0	13.4	127	82	109	432	320	333[a]	432	352	387[a]
176840	W.F.	1/28/58	1/14/58	2	43.6	42.4	42.9	14.0	12.8	13.4	132	75	109	416	312	369[a]	416	360	387[a]
Current Mill Average:							43.5			13.2			113			371			398
Cumulative Mill Average:							43.1			12.6			110			343			383
Mill Factor, %							100.9			104.8			102.7			108.2			103.9
Mill Index, %							100.9			103.9			101.8			111.1			107.0

[a]This average includes the readings for one or more specimens which tore beyond the 3/3-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE IX

MILL G -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176503	W.F.	1/ 6/58	12/17/57	1	44.4	43.0	43.7	13.0	11.1	12.1	141	91	114	344	272	305[a]	368	312	339[a]
176504	W.F.	1/ 6/58	12/17/57	1	44.4	43.2	43.7	13.0	11.0	12.0	125	89	108	368	264	307[a]	376	296	339[a]
176640	W.F.	1/13/58	12/18/57	1	44.4	43.8	44.0	12.7	11.7	12.1	140	89	116	336	272	311	392	320	347[a]
176641	W.F.	1/13/58	12/18/57	1	44.6	41.6	43.9	13.1	11.9	12.3	131	93	115	368	296	326[a]	384	288	342[a]
176667	W.F.	1/16/58	12/19/57	2	44.2	42.4	43.6	13.7	12.0	12.8	121	72	99	352	288	317[a]	400	304	354[a]
176668	W.F.	1/16/58	12/19/57	2	42.6	41.0	42.0	13.0	11.2	12.1	130	70	103	344	264	301[a]	400	304	348[a]
176706	W.F.	1/20/58	1/ 7/58	2	44.0	42.4	43.7	13.9	12.4	13.0	138	67	107	352	272	315[a]	392	320	368[a]
176707	W.F.	1/20/58	1/ 7/58	2	43.0	40.8	42.3	13.0	11.8	12.3	135	86	111	344	240	297	368	304	346[a]
176736	W.F.	1/27/58	1/20/58	2	43.2	41.6	42.3	13.1	11.8	12.6	134	74	103	360	264	315[a]	416	240	337[a]
176737	W.F.	1/27/58	1/20/58	2	43.2	41.6	42.4	13.0	11.7	12.4	130	82	101	368	272	323[a]	368	328	351[a]
Current Mill Average:							43.2			12.4			108			312			347
Cumulative Mill Average:							42.7			12.4			113			314			364
Mill Factor, %							101.2			100.0			95.6			99.4			95.3
Mill Index, %							100.2			97.6			97.3			93.4			93.3

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE X

MILL H -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Gen. No.	Basis Weight, lb. Max.	Min.	Av.	Caliper, points Max.	Min.	Av.	Bursting Strength, p.s.i. Gage Max.	Min	Av.	Elmendorf Tear, g./sheet In Max.	Min.	Av.	Across Max.	Min.	Av.
176595	FIS	1/10/58	1/ 2/58	1	46.0	43.8	45.0	14.1	13.0	13.5	122	82	103	360	264	324[a]	392	352	373[a]
Current Mill Average							45.0			13.5			103			324			373
Cumulative Mill Average							42.8			12.8			110			310			358
Mill Factor, %							105.1			105.5			93.6			104.5			104.2
Mill Index, %							104.4			106.3			92.8			97.0			100.3

TABLE XI

MILL I -- 42-LB. LINERBOARD

176485	N F	1/ 2/58	12/17/57	4	45.0	42.6	43.8	12.9	12.1	12.5	130	93	110	424	336	383[a]	464	360	411[a]
176486	N F	1/ 2/58	12/18/57	4	43.6	40.0	42.6	12.5	11.5	12.1	127	95	108	400	304	361[a]	400	328	366[a]
Current Mill Average							43.2			12.3			109			372			388
Cumulative Mill Average							42.5			11.4			114			336			376
Mill Factor, %							101.6			107.9			95.6			110.7			103.2
Mill Index, %							100.2			96.9			93.2			111.4			104.3

[a]This average includes the readings for one or more specimens which tore beyond the 3/3-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XII

MILL J -- 42-LB. LINERBOARD

File No.	Finish	Date Recd	Date Made	Mach No.	Basis Weight, lb.			Caliper, points			Bursting Strengtn, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176476	M.F.	1/ 2/58	11/11/57	1	43.6	41.6	42.5	15.0	13.9	14.6	140	87	114	360	256	313	432	336	391[a]
176477	M.F.	1/ 2/58	11/14/57	1	44.2	42.0	43.2	14.6	13.0	13.6	124	65	108	376	272	312	440	344	383[a]
176478	M.F.	1/ 2/58	11/19/57	1	45.4	42.4	44.2	13.9	12.3	13.2	138	97	116	328	280	309	432	344	387[a]
176479	M.F.	1/ 2/58	11/23/57	1	42.0	40.6	41.5	13.7	11.8	12.9	131	80	110	336	248	285	360	328	346[a]
176480	M.F.	1/ 2/58	11/25/57	1	42.6	41.8	42.3	14.2	12.8	13.5	124	87	110	328	248	284[a]	424	320	352[a]
176481	M.F.	1/ 2/58	11/27/57	1	43.8	42.8	43.4	13.3	12.8	13.1	142	98	124	328	248	291[a]	400	344	370[a]
176547	M.F.	1/ 7/58	12/ 2/57	1	42.8	41.6	42.0	13.9	12.9	13.2	137	80	116	328	216	272[a]	368	296	336[a]
176548	M.F.	1/ 7/58	12/ 5/57	1	42.6	41.6	42.1	13.9	12.7	13.2	146	88	120	344	248	293[a]	400	328	364[a]
176549	M.F.	1/ 7/58	12/10/57	1	43.8	43.0	43.5	14.0	12.8	13.4	150	102	122	360	272	308[a]	416	360	384[a]
176550	M.F.	1/ 7/58	12/12/57	1	44.4	42.4	43.2	13.8	12.9	13.3	143	98	121	360	232	301[a]	384	336	360[a]
Current Mill Average							42.8			13.4			116			297			367
Cumulative Mill Average							42.7			13.4			116			304			371
Mill Factor, %							100.2			100.0			100.0			97.7			98.9
Mill Index, %							99.3			105.5			104.5			88.9			98.7

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XIII

MILL K -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.

No samples submitted.

TABLE XIV

MILL L -- 42-LB. LINERBOARD

176474	W	1/ 2/58	12/ 9/57	4	43.8	41 2	42.5	13.8	12.8	13.3	135	97	116	400	336	367[a]	424	328	372[a]
176475	W	1/ 2/58	12/16/57	2	44.0	40 8	42.0	14.0	12.9	13.4	139	88	111	432	328	363[a]	416	320	379[a]
176593	W	1/10/58	12/30/57	2	44.2	42.0	42.7	13.8	13.0	13.3	125	87	108	392	296	343[a]	400	352	379[a]
176594	W	1/10/58	12/31/57	2	43.6	40.8	42.3	14.0	13.0	13.5	129	92	109	360	312	337[a]	384	328	361[a]
176734	W	1/21/58	1/ 2/58	2	43.6	40.4	42.2	14.5	13.0	13.8	130	95	112	432	312	363[a]	496	360	397[a]
176735	W	1/21/58	1/ 4/58	4	43.8	41.6	43.1	12.4	11.2	12.0	132	102	114	400	336	375[a]	424	320	369[a]
Current Mill Average							42.5			13.2			112			358			376
Cumulative Mill Average							42.8			13.2			111			368			378
Mill Factor, %							99.3			100.0			100.9			97.3			99.5
Mill Index, %							98.6			103.9			100.9			107.2			101.1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE V"

MILL M -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176699	W.B.	1/20/58	1/ 8/58	-	44.0	40.2	42.5	12.8	11.7	12.2	130	87	111	432	320	391[a]	472	368	423[a]
176700	W.B.	1/20/58	1/ 8/58	-	43.8	42.0	42.8	12.8	11.9	12.3	133	94	112	432	336	373[a]	448	336	408[a]
176701	W.B.	1/20/58	1/13/58	-	43.8	42.4	43.2	12.5	11.7	12.1	132	85	110	448	352	389[a]	464	384	413[a]
176788	W.B.	1/27/58	1/13/58	-	44.0	41.0	42.8	12.5	11.4	12.1	125	85	107	440	368	395[a]	456	368	407[a]
176789	W.B.	1/27/58	1/14/58	-	45.0	43.0	43.8	13.0	11.7	12.5	132	80	104	464	360	394[a]	448	408	429[a]
Current Mill Average							43.0			12.2			109			388			416
Cumulative Mill Average							43.6			12.1			113			372			404
Mill Factor, %							98.6			100.8			96.5			104.3			103.0
Mill Index, %							99.8			96.1			98.2			116.2			111.8

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XVI

MILL N -- 42-LB. LINERBOARD

File No.	Finish	Date Recd	Date Made	Mach. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176551	F	1/ 9/58	1/ 1/58	-	44.2	43.6	43.8	12.8	12.0	12.2	132	92	112	344	264	311[a]	400	320	355[a]
176552	F.	1/ 8/58	1/ 2/58	-	43.6	42.6	43.2	13.1	12.1	12.7	127	91	110	336	304	321[a]	400	280	342[a]
176553	.F.	1/ 8/58	1/ 3/58	-	42.2	40.8	41.4	12.7	12.0	12.2	110	89	101	352	264	305[a]	352	304	331[a]
176669	.F	1/17/58	1/ 8/58	-	46.4	45.6	46.0	13.6	12.7	13.0	129	92	110	376	272	340	432	320	371[a]
176670	. F.	1/17/58	1/ 9/58	-	45.0	43.8	44.1	13.2	12.3	12.9	133	98	113	392	320	343[a]	384	336	362[a]
176671	.F.	1/17/58	1/10/58	-	44.4	42.4	43.1	12.9	12.1	12.6	121	98	108	368	288	331	384	320	353[a]
176756	.F.	1/23/58	1/15/58	-	44.0	42.0	42.7	13.0	12.0	12.5	127	85	107	384	304	338[a]	400	344	375[a]
176757	.F.	1/23/58	1/16/58	-	44.4	41.6	42.8	13.1	12.1	12.6	112	87	100	360	288	317[a]	400	304	347[a]
176758	.F.	1/23/58	1/17/58	-	44.6	43.4	44.0	13.2	12.4	12.8	120	78	104	360	288	320[a]	368	312	344[a]
Current Mill Average							43.4			12.6			107			325			353
Cumulative Mill Average.							43.7			12.8			110			351			378
Mill Factor, %							99.3			98.4			97.3			92.6			93.4
Mill Index, %							100.7			99.2			96.4			97.3			94.9

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XVII

MILL O -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176663	W.F.	1/16/58	1/ 7/58	-	45.4	42.2	43.8	13.3	12.0	12.7	132	84	108	392	304	350[a]	416	304	372[a]
176664	W.F.	1/16/58	1/13/58	-	43.8	42.8	43.5	13.0	12.0	12.4	137	101	116	416	320	357[a]	448	368	405[a]
176665	W.F.	1/16/58	1/13/58	-	43.8	41.8	43.2	13.1	11.8	12.3	137	88	116	432	304	375[a]	416	352	381[a]
176666	W.F.	1/16/58	1/13/58	-	44.2	42.4	43.6	13.0	11.4	12.2	136	97	115	416	320	357[a]	464	360	391[a]
176672	W.F	1/17/58	1/13/58	-	42.2	41.0	41.7	12.4	11.2	11.8	138	90	114	368	304	333[a]	400	352	371[a]
176673	W.F	1/17/58	1/13/58	-	44.0	42.4	43.4	12.6	11.0	11.9	137	101	114	384	320	347[a]	416	352	377[a]
176674	W F	1/17/58	1/13/58	-	46.4	44.0	45.8	13.8	12.2	13.2	138	90	118	392	312	351[a]	432	352	389[a]
Current Mill Average							43.6			12.3			115			353			384
Cumulative Mill Average							43.7			12.7			116			349			387
Mill Factor, %							99.8			96.9			99.1			101.1			99.2
Mill Index, %							101.2			96.9			103.6			105.7			103.2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XVIII

MILL P — 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176506	WFLS	1/ 6/58	12/22/57	1	43.6	42.2	43.0	13.8	12.2	13.0	135	88	113	400	288	339[a]	456	344	392[a]
176790	WFLS	1/27/58	1/19/58	1	43.4	42.0	42.7	14.2	12.7	13.5	130	78	104	344	248	302[a]	384	328	352[a]
176791	WFLS	1/27/58	1/21/58	1	43.6	42.2	42.9	14.2	13.1	13.6	122	80	106	336	272	311[a]	384	336	361[a]
Current Mill Average							42.9			13.3			108			317			368
Cumulative Mill Average.							43.0			13.3			113			321			361
Mill Factor, %							99.8			100.0			95.6			98.8			101.9
Mill Index, %							99.5			104.7			97.3			94.9			98.9

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XIX

MILL Q -- 42-LB. LINERBOARD

File No.	Finish	Date Recd	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176596	WFIS	1/10/58	1/ 2/58	2	42 6	41.8	42 1	13.8	12.9	13.3	158	124	132	360	280	333[a]	400	360	375[a]
176697	WFIS	1/20/58	1/15/58	2	43.0	41 6	42.1	13.9	13.0	13.4	147	107	129	400	312	347[a]	432	352	383[a]
176698	WFIS	1/20/58	1/16/58	2	43.0	41.8	42 3	14.0	13.0	13.6	143	105	125	432	320	365[a]	432	352	387[a]
Current Mill Average							42.2			13.4			129			348			382
Cumulative Mill Average							42.7			13.5			111			337			364
Mill Factor, %							98.8			99.3			116.2			103.3			104.9
Mill Index, %							97.9			105.5			116.2			104.2			102.7

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

SUMMARY OF INSTITUTE DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XX

MILL S -- 42-LB. LINERBOARD

File No.	Finish	Date Recd.	Date Made	Mch. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
														In			Across		
					Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.
176483	S.F.	1/ 2/58	--------	7	45.6	40.6	42.8	13.3	12.2	12.9	137	66	106	440	344	379[a]	440	352	388[a]
176484	S.F.	1/ 2/58	12/19/57	7	44.0	42.0	43.3	13.1	12.0	12.6	132	81	106	432	288	351	464	336	401[a]
176639	S.F.	1/13/58	1/ 6/58	7	44.0	41.8	42.7	13.0	12.1	12.6	141	84	112	368	304	335	408	320	374[a]
176708	S.F.	1/20/58	1/16/58	7	44.0	41.0	42.6	13.5	12.7	13.0	135	81	109	448	336	377	448	344	389[a]
Current Mill Average							42.8			12.8			108			360			388
Cumulative Mill average:							43.3			13.0			103			368			379
Mill Factor, %							98.8			98.5			104.9			97.8			102.4
Mill Index, %							99.3			100.8			97.3			107.8			104.3

TABLE XXI

MILL R -- 47-LB. DRUM LINERBOARD

No samples submitted.

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

As a supplementary part of the Continuous Baseline Study, comparisons of the mill test results with those obtained at The Institute of Paper Chemistry on corresponding samples have been included in this report. As may be noted in Table XXII, the atmospheric conditions used prior to and during the testing period were relatively uniform for the mills which reported this information. However, the conditioning periods varied considerably.

TABLE XXII

Mill Code	Preconditioning R.H., %	Temp., °F.	Time, hr.	Conditioning R.H., %	Temp., °F.	Time, hr.
A		None		50-61	67-73	24
B			No samples submitted.			
C	56-62	73-78	0.5	50	73	24-48
D	50-51	72-73	24	50-52	72-73	24
E			No samples submitted.			
F		None		50	73	24
G	50	73	24	50	73	24
H	49	73	24	48	73	2
I		None		50	73	24
J		None		54-88	78-84	--
K			No samples submitted.			
L		None		51-53	73	--
M		None		52-58	71-72	48
N	33-35	78-79	8	51-53	73	16
O		None		50	73	24-48+
P		None		40-44	80-93	--
Q	50	70-74	24		None	
S	50	73	24	50	73	--

A summary of the Institute and mill test results for the current period is shown in Table XXIII, and a comparison of differences between Institute and mill test results is given in Table XXIV for the current

period and the two previous periods. The comparisons are given in Tables XXV to XLII, for the 42-lb. liner samples. A comparison of the special drum stock is given in Table XLIII. In all the comparisons given in Tables XXV to XLIII, the Institute's test values have been used as the reference line.

A comparison of the test data in Tables XXIII and XXIV reveals the level of agreement between mill and Institute data for basis weight, caliper, bursting strength, and Elmendorf tear. Table XXIII shows the average difference between Institute and mill test results for all sample lots submitted by each mill for the current period. In addition, the maximum difference encountered in comparing the Institute and mill test results for a given sample lot is shown. In Table XXIV, the average differences shown for each test in Table XXIII have been calculated on a percentage basis for each mill. In addition, for purposes of comparison, the average percentage differences for the preceding two periods are shown.

It may be noted in Table XXIV that the maximum variation between the average basis weight results of the Institute and those of a given mill on corresponding samples is five per cent for the current period. By comparison, the maximum percentage variation noted for the previous two periods was three per cent. Further, it may be noted that the average basis weight results for Mills D, G, N, and Q are higher than those for the Institute, and the average results for the other mills are lower. The variation of five per cent associated with Mill H appears to be excessive.

The maximum variation in caliper for the current period is seven per cent. The maximum variation for the previous two periods was six per cent.

Compared with the Institute's test results, the test results for Mills C and O are higher than those for the Institute and the test results for the rest of the mills are lower. The variation of seven per cent associated with Mill H appears to be excessive.

It may be noted in Table XXIV that the bursting strength results exhibited a maximum variation of six per cent for the current period. The average results for Mills A, C, G, M, and N are higher than those for the Institute, the average results for Mills P and S are the same, and the results for the other mills are lower. None of the variations appear to be inordinately large with the possible exception of that for Mill I.

It may be seen in Tables XXIII and XXIV that the average machine direction tear results for Mills A, C, F, M, and Q are higher than those for the Institute, and the results for the other mills are lower. The maximum variation for the current period is fifteen per cent. For the current period only the variation of fifteen per cent noted for Mill I appears to be excessive.

With regard to the cross-machine direction tear results, it may be noted that the average results for Mills A, C, D, F, H, J, L, M, N, P, Q, and S are higher than those for the Institute, the average result for Mill G is the same, and the average results for the other mills are lower. The maximum variation for the current period is twelve per cent. The variation associated with the result for Mill Q appears to be larger than would normally be anticipated for this test.

TABLE XXIII

SUMMARY OF TEST RESULT COMPARISONS (AVERAGE MILL AND INSTITUTE RESULTS)

Mills	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S
No. Samples Compared	8	0	3	3	0	7	10	1	2	10	0	6	5	9	7	3	3	4
Basis Weight																		
Institute	43.5		43.3	42.7		43.5	43.2	45.0	43.2	42.8		42.5	43.0	43.4	43.6	42.9	42.2	42.8
Mill	43.1		43.2	43.1		43.4	43.5	42.8	43.0	42.0		42.2	42.7	44.1	43.3	42.0	43.1	42.6
Av. Diff.*	-0.4		-0.1	+0.4		-0.1	+0.3	-2.2	-0.2	-0.8		-0.3	-0.3	+0.7	-0.3	-0.9	+0.9	-0.2
Max. Diff.**	-0.8		-0.1	+0.9		-0.6	+0.6	-2.2	-0.4	-1.5		-0.5	-0.7	+2.3	-0.5	-0.9	+1.1	-0.8
Caliper																		
Institute	12.7		12.5	12.3		13.2	12.4	13.5	12.3	13.4		13.2	12.2	12.6	12.3	13.3	13.4	12.8
Mill	12.4		12.6	11.8		12.6	12.0	12.5	12.0	13.0		12.8	11.7	12.2	12.4	12.6	13.0	12.5
Av. Diff.*	-0.3		+0.1	-0.5		-0.6	-0.4	-1.0	-0.3	-0.4		-0.4	-0.5	-0.4	+0.1	-0.7	-0.4	-0.3
Max. Diff.**	-0.9		+0.2	-0.6		-0.9	-0.7	-1.0	-0.3	-0.6		-0.7	-0.5	-0.8	+0.2	-0.9	-0.6	-0.4
Bursting Strength																		
Institute	113		103	111		113	108	103	109	116		112	109	107	115	108	129	108
Mill	114		104	106		112	112	102	102	111		108	111	110	112	108	122	108
Av. Diff.*	+1		+1	-5		-1	+4	-1	-7	-5		-4	+2	+3	-3	0	-7	0
Max. Diff.**	-11		+4	-7		-5	+11	-1	-8	-9		-6	+7	+8	-5	-4	-7	+5
Tearing Strength, in																		
Institute	322		285	316		371	312	324	372	297		358	388	325	353	317	348	360
Mill	327		295	303		378	306	304	315	280		342	402	315	327	311	360	345
Av. Diff.*	+5		+10	-13		+7	-6	-20	-57	-17		-16	+14	-10	-26	-6	+12	-15
Max. Diff.**	+42		+32	-28		+39	-22	-20	-60	-61		-39	+28	-30	-34	-11	+15	-37
Tearing Strength, across																		
Institute	378		335	369		398	347	373	388	367		376	416	353	384	368	382	388
Mill	397		350	383		434	347	385	354	368		377	442	354	372	370	426	392
Av. Diff.*	+19		+15	+14		+36	0	+12	-34	+1		+1	+26	+1	-12	+2	+44	+4
Max. Diff.**	+54		+16	+65		+54	+21	+12	-58	-36		+21	+48	-19	-29	+28	+54	+27

* Comparison based on averages involved only those samples on which mill test data were submitted.
** Average difference is the difference between the Institute mill average and the mill average based on mill test data.
*** Maximum difference encountered in comparing the Institute average and the mill average for any sample submitted by that particular mill.

TABLE XXIV

COMPARISON OF INSTITUTE-MILL DIFFERENCES BY PERIODS
Average Differences, per cent

Mill	Period	Basis Weight	Caliper	Burst	Tear, in	Tear, across
A	Current	-0.9	-2	+0.9	+2	+5
	126th	-2	-2	-3	0	-0.5
	125th	-1	-2	-3	-1	+5
B	Current	--	--	--	--	--
	126th	--	--	--	--	--
	125th	--	--	--	--	--
C	Current	-0.2	+0.8	+1	+4	+4
	126th	0	+0.8	+0.9	+7	+2
	125th	-0.7	-2	0	+5	+4
D	Current	+0.9	-4	-5	-4	+4
	126th	-1	-5	-2	-11	-7
	125th	--	--	--	--	--
E	Current	--	--	--	--	--
	126th	-2	-2	0	+6	+9
	125th	-0.5	-2	-2	-6	+11
F	Current	-0.2	-5	-0.9	+2	+9
	126th	+0.5	-2	0	+8	+17
	125th	+0.2	-0.8	-0.9	+9	+20
G	Current	+0.7	-3	+4	-2	0
	126th	0	-3	+3	-3	-3
	125th	+0.5	-2	+0.9	+2	+2
H	Current	-5	-7	-1	-6	+3
	126th	-2	-5	-3	-1	+5
	125th	-0.5	-6	-3	+4	+11
I	Current	-0.5	-2	-6	-15	-9
	126th	--	--	--	--	--
	125th	--	--	--	---	--
J	Current	-2	-3	-4	-6	+0.3
	126th	-2	-2	-2	-3	+2
	125th	--	--	--	--	--
K	Current	--	--	--	--	--
	126th	-1	-2	-3	+5	+10
	125th	-0.7	-0.8	-8	+19	+9
L	Current	-0.7	-3	-4	-4	+0.3
	126th	-0.7	-5	-2	-9	-2
	125th	-0.7	-3	-3	-2	-1
M	Current	-0.7	-4	+2	+4	+6
	126th	-2	-5	+0.9	+2	+3
	125th	-0.9	-3	+3	-1	+3
N	Current	+2	-3	+3	-3	+0.3
	126th	-0.5	-2	0	-3	+1
	125th	+0.5	-2	0	-1	+0.8
O	Current	-0.7	+0.8	-3	-7	-3
	126th	-0.9	-0.8	-2	-11	-5
	125th	+0.2	-2	-0.9	-4	-1
P	Current	-2	-5	0	-2	+0.5
	126th	-2	-4	-3	-5	-3
	125th	-2	-4	-0.9	-0.3	+8
Q	Current	+2	-3	-5	+3	+12
	126th	+2	-0.7	-8	+6	+13
	125th	+3	-4	-3	+6	+6
S	Current	-0.5	-2	0	-4	+1
	126th	-2	+2	+3	+0.6	+11
	125th	0	-4	+1	-2	+4

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958

TABLE XXV

MILL A -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mch. No	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
176482	FIS	12/18/57	2	43.5	43.1	-0.4	12 6	12.4	-0.2	120	116	- 4	337[a]	333	- 4	396[a]	395	- 1
176556	F.	1/ 2/58	1	43.4	42.8	-0.6	13.1	12.6	-0.5	109	111	+ 2	332[a]	317	-15	379[a]	389	+10
176557	F	1/ 2/58	1	43.5	42.9	-0.6	13.3	12.4	-0.9	103	111	+ 8	315[a]	318	+ 3	372[a]	389	+17
176637	F.	1/ 5/58	2	43.8	43.0	-0.8	12.4	12.1	-0.3	125	114	-11	321[a]	320	- 1	383[a]	396	+13
176638	F.	1/ 6/58	2	43.6	42 9	-0.7	12.5	12.1	-0.4	118	114	- 4	297	318	+21	373[a]	392	+19
176759	F	1/12/58	2	43.8	43.8	0.0	12.7	12.5	-0.2	116	118	+ 2	317	359	+42	385[a]	439	+54
176760	F.	1/13/58	2	43.4	43.1	-0.3	12.3	12.4	+0.1	111	114	+ 3	327[a]	322	- 5	365[a]	407	+42
176761	F	1/20/58	1	43.3	42.9	-0.4	12.9	12.7	-0.2	104	111	+ 7	331[a]	333	+ 2	375[a]	368	- 7
Current Mill Average				43.5	43.1	-0.4	12.7	12 4	-0.3	113	114	+ 1	322	327	+ 5	378	397	+19

TABLE XXVI

MILL B -- 42-LB. LINERBOARD

No samples submitted

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note All "current mill average" data are calculated from the totals of the individual readings.

CO PARISO OF I STITUTE AND MILL DATA--JANUARY 1 THROUGH MAY 31 1958 (continued)

TABLE XXVII

MILL C -- 42-LB LINERBOARD

Mill & Machine	Date Made	Con No.	Basis Weight, lb			Caliper, points			Bursting Strength p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
			IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.
176554 F	11/25/57	1	43.1	43.0	-0.1	12.6	12.6	0.0	103	104	+1	280	288	- 8	330[a]	346	-16
176555 F	12/ 7/57	1	43.2	43.2	0.0	12.6	12.5	-0.1	100	104	+4	261	293	+32	334[a]	350	+16
176654 F.	12/10/57	1	43.5	43.4	-0.1	12.4	12.6	+0.2	107	105	-2	315	305	-10	341[a]	354	+13
Current Mill Average			43.3	43.2	-0.1	12.5	12.6	+0.1	103	104	+1	285	295	+10	335	350	+15

TABLE XXVIII

MILL D -- 42-LB LINERBOARD

Mill & Machine	Date Made	Con No.	Basis Weight, lb			Caliper, points			Bursting Strength p.s.i. gage			Elmendorf Tear, g./sheet In			Elmendorf Tear, g./sheet Across		
			IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.
176505 F.	12/27/57	2	42.7	42.9	+0.2	12.2	11.8	-0.4	109	103	-6	325[a]	337	+12	373[a]	438	+65
176558 at	1/ 4/58	2	42.4	42.3	-0.1	12.1	11.5	-0.6	113	106	-7	301[a]	273	-28	354[a]	341	-13
176655 at	1/ 6/58	2	43.1	44.0	+0.9	12.6	12.2	-0.4	111	109	-2	323[a]	298	-25	379[a]	370	- 9
Current Mill Average			42.7	43.1	+0.4	12.3	11.8	-0.5	111	106	-5	316	303	-13	369	383	+14

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit

Note: All "current mill average" data are calculated from the totals of the individual readings

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXIX

MILL E -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mch No	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.
No samples submitted																		

TABLE XXX

MILL F -- 42-LB. LINERBOARD

176642	W.F	12/15/57	2	42.7	42.5	-0.2	13.3	12.8	-0.5	108	107	-1	365[a]	381	+16	387[a]	416	+29
176702	W.F.	1/ 1/58	2	43.7	44.2	+0.5	13.1	12.6	-0.5	114	111	-3	363[a]	371	+ 8	424[a]	429	+ 5
176703	W.F	1/ 2/58	2	43.9	43.9	0.0	13.0	12.7	-0.3	115	115	0	373	369	- 4	397[a]	426	+29
176704	W.F.	1/ 5/58	2	44.0	44.3	+0.3	13.1	12.7	-0.4	116	114	-2	370	409	+39	412[a]	466	+54
176705	W.F	1/11/58	2	43.9	43.9	0.0	13.0	12.6	-0.4	118	113	-5	370	365	- 5	393[a]	436	+43
176839	W.F	1/13/58	2	43.1	42.5	-0.6	13.4	12.5	-0.9	109	110	+1	383[a]	374	- 9	387[a]	431	+44
176840	W.F.	1/14/58	2	42.9	42.4	-0.5	13.4	12.6	-0.8	109	112	+3	369[a]	380	+11	387[a]	436	+49
Current Mill Average				43.5	43.4	-0.1	13.2	12.6	-0.6	113	112	-1	371	378	+ 7	398	434	+36

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXI

MILL G -- 42-LB. LINERBOARD

File no.	Mill	Date made	Lot no.	Basis weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff
[illegible]	F	12/17/57	1	43.7	44.1	+0.4	12.1	11.8	-0.3	114	118	+ 4	305[a]	315	+10	339[a]	360	+21
[illegible]	F	12/17/57	1	43.7	43.8	+0.1	12.0	11.7	-0.3	108	115	+ 7	307[a]	297	-10	339[a]	332	- 7
[illegible]	F	12/18/57	1	44.0	44.2	+0.2	12.1	11.9	-0.2	116	113	- 3	311	315	+ 4	347[a]	333	-14
[illegible]	F	12/18/57	1	43.9	44.0	+0.1	12.3	11.9	-0.4	115	117	+ 2	326[a]	306	-20	342[a]	344	+ 2
[illegible]	F	12/19/57	2	43.6	43.6	0.0	12.8	12.5	-0.3	99	110	+11	317[a]	312	- 5	354[a]	347	- 7
[illegible]	F	12/19/57	2	42.0	42.6	+0.6	12.1	12.0	-0.1	103	113	+10	301[a]	291	-10	348[a]	353	+ 5
[illegible]	F	1/ 7/58	2	43.7	44.1	+0.4	13.0	12.3	-0.7	107	110	+ 3	315[a]	310	- 5	368[a]	372	+ 4
[illegible]	F	1/ 7/58	2	42.3	42.9	+0.6	12.3	12.0	-0.3	111	109	- 2	297	301	+ 4	346[a]	354	+ 8
[illegible]	F	1/20/58	2	42.3	42.6	+0.3	12.6	12.1	-0.5	103	110	+ 7	315[a]	310	- 5	337[a]	337	0
[illegible]	F	1/20/58	2	42.4	42.7	+0.3	12.4	12.0	-0.4	101	108	+ 7	323[a]	301	-22	351[a]	337	-14
Current mill average				43.2	43.5	+0.3	12.4	12.0	-0.4	108	112	+ 4	312	306	- 6	347	347	0

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note -- The "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXII

MILL H -- 42-LB LINERBOARD

File No.	Finish	Date Made	Mach No	Basis weight, lb			Caliper, points			Bursting Strength p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.
176595	FLS	1- 2/58	1	45.0	42.8	-2.2	13.5	12.5	-1.0	103	102	- 1	324[a]	304	-20	373[a]	385	+12
Current Mill Average				45.0	42.8	-2.2	13.5	12 5	-1.0	103	102	- 1	324	304	-20	373	385	+12

TABLE XXXIII

MILL I -- 42-LB LINERBOARD

176485	F.	12/17/57	4	43.8	43.4	-0 4	12.5	12 2	-0.3	110	104	- 6	383[a]	328	-55	411[a]	353	-58
176486	F.	12/18/57	4	42.6	42.6	0.0	12.1	11.8	-0.3	108	100	- 8	361[a]	301	-60	366[a]	356	-10
Current Mill Average				43.2	43.0	-0.2	12.3	12 0	-0.3	109	102	- 7	372	315	-57	388	354	-34

[a] This average includes the readings for one or more specimens which tore beyond the 3'8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXIV

MILL J -- 42-LB LINERBOARD

Code	Finish	Date Made	Reel No.	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.
176476	F	11/11/57	1	42.5	42.2	-0.3	14.6	14.0	-0.6	114	109	-5	313	309	- 4	391[a]	376	-15
176477	F	11/14/57	1	43.2	42.0	-1.2	13.6	13.0	-0.6	108	105	-3	312[a]	251	-61	383[a]	347	-36
176478	F	11/19/57	1	44.2	42.7	-1.5	13.2	12.8	-0.4	116	113	-3	309	276	-33	387[a]	362	-25
176479	F	11/23/57	1	41.5	41.9	+0.4	12.9	12.9	0.0	110	109	-1	235	293	- 2	346[a]	363	+17
176480	F	11/25/57	1	42.3	41.7	-0.6	13.5	13.1	-0.4	110	114	+4	284[a]	319	+35	352[a]	380	+28
176481	F	11/27/57	1	43.4	41.9	-1.5	13.1	13.1	0.0	124	115	-9	291[a]	266	-25	370[a]	378	+ 8
176547	F	12/ 2/57	1	42.0	41.6	-0.4	13.2	12.7	-0.5	116	107	-9	272[a]	273	+ 1	336[a]	358	+22
176548	F	12/ 5/57	1	42.1	41.9	-0.3	13.2	13.0	-0.2	120	113	-7	293[a]	267	-26	364[a]	375	+11
176549	F	12/10/57	1	43.5	42.7	-0.8	13.4	12.9	-0.5	122	114	-8	308[a]	278	-30	384[a]	360	-24
176550	F	12/12/57	1	43.2	41.9	-1.3	13.3	12.9	-0.4	121	112	-9	301[a]	280	-21	360[a]	384	+24
Current Mill Average				42.8	42.0	-0.8	13.4	13.0	-0.4	116	111	-5	297	280	-17	367	368	+ 1

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: The "Current Mill Average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXV

MILL K -- 42-LB LINERBOARD

File No.	Series	Date Made	Men. No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elrendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
No samples submitted																		

TABLE XXXVI

MILL L -- 42-LB. LINERBOARD

176474		12/ 9/57	4	42.5	42.1	-0.4	13.3	12.7	-0.6	116	113	-3	367[a]	340	-27	372[a]	361	-11
176475	"	12/16/57	2	42.0	42.0	0.0	13.4	12.7	-0.7	111	111	0	363[a]	324	-39	379[a]	373	- 6
176593	"	12/30/57	2	42.7	42.2	-0.5	13.3	12.8	-0.5	108	104	-4	343[a]	359	+16	379[a]	379	0
176594		12/31/57	2	42.3	41.8	-0.5	13.5	12.9	-0.6	109	107	-2	337[a]	342	+ 5	361[a]	382	+21
176734		1/ 2/58	2	42.2	42.2	0.0	13.8	13.1	-0.7	112	108	-4	363[a]	334	-29	397[a]	385	-12
176735		1/ 4/58	4	43.1	42.8	-0.3	12.0	12.3	+0.3	114	108	-6	375[a]	353	-22	369[a]	384	+15
Current mill average				42.5	42.2	-0.3	13.2	12.8	-0.4	112	108	-4	358	342	-16	376	377	+ 1

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXVII

MILL M -- 42-LB. LINERBOARD

File No.	Machine	Date Made	Batch No.	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.
176699	B	1/ 8/58	-	42.5	42.7	+0.2	12.2	11.8	-0.4	111	113	+2	391[a]	407	+16	423[a]	445	+22
176720	B	1/ 8/58	-	42.8	42.2	-0.6	12.3	11.8	-0.5	112	109	-3	373[a]	381	+ 8	408[a]	429	+21
176721	B	1/12/58	-	43.2	43.0	-0.2	12.1	11.6	-0.5	110	111	+1	389[a]	417	+28	413[a]	461	+48
176733	B	1/13/58	-	42.8	42.3	-0.5	12.1	11.6	-0.5	107	112	+5	395[a]	395	0	407[a]	436	+29
176739	B	1/14/58	-	43.8	43.1	-0.7	12.5	12.0	-0.5	104	111	+7	394[a]	412	+18	429[a]	436	+ 7
Current mill average				43.0	42.7	-0.3	12.2	11.7	-0.5	109	111	+2	388	402	+14	416	442	+26

[a] This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "current mill average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXVIII

MILL A -- 42-LB LINERBOARD

File No.	Finish	Date Made	Run No.	Basis Weight, lb.			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff.
176551	F	1 1 58	-	43.2	44.1	+0.3	12.2	11.9	-0.3	112	111	-1	311[a]	308	- 3	355[a]	353	- 2
176552	F.	1 2/58	-	43.2	43.2	0.0	12.7	12.1	-0.6	110	115	+5	321[a]	291	-30	342[a]	335	- 7
176553	F	1 3/58	-	41.4	42 1	+0.7	12.2	11.4	-0.8	101	102	+1	305[a]	283	-22	331[a]	333	+ 2
176669	F	1 8/58	-	46.0	45.7	-0.3	13.0	12 8	-0.2	110	107	-3	340	320	-20	371[a]	352	-19
176670	F	1/ 9/58	-	44.1	45.2	+1.1	12.9	12.7	-0.2	113	119	+6	343[a]	325	-18	362[a]	369	+ 7
176671	F	1/10/58	-	43.1	45.4	+2.3	12.6	12.2	-0 4	108	115	+7	331	345	+14	353[a]	369	+16
176756	F.	1/15/58	-	42.7	43.4	+0.7	12 5	12.6	+0.1	107	111	+4	338[a]	329	- 9	375[a]	369	- 6
176757	F.	1/16/58	-	42.8	43.9	+1.1	12.6	12.4	-0.2	100	108	+8	317[a]	323	+ 6	347[a]	359	+12
176758	F.	1/17/58	-	44.0	43.5	-0.5	12.8	12.2	-0.6	104	104	0	320[a]	315	- 5	344[a]	349	+ 5
Current Mill Average				43.4	44.1	+0.7	12.6	12.2	-0.4	107	110	+3	325	315	-10	353	354	+ 1

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit.

Note: All "Current Mill Average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XXXIX

MILL O -- 42-LB. LINERBOARD

File	Finish	Date Made	Mach No	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff	IPC	Mill	Diff	IPC	Mill	Diff.	IPC	Mill	Diff	IPC	Mill	Diff.
176663	F	1/ 7/58	-	43.8	43.4	-0.4	12.7	12 6	-0.1	108	105	-3	350[a]	319	-31	372[a]	352	-20
176664	F	1/10/58	-	43.5	43.2	-0.3	12.4	12.3	-0.1	116	113	-3	357[a]	341	-16	405[a]	376	-29
176665	F	1/13/58	-	43.2	43.3	+0.1	12.3	12.3	0.0	116	111	-5	375[a]	341	-34	381[a]	379	- 2
176666	F	1/13/58	-	43.6	43.1	-0.5	12.2	12.2	0.0	115	116	+1	357[a]	339	-18	391[a]	388	- 3
176672	F.	1/10/58	-	41.7	41.5	-0.2	11.8	11.9	+0.1	114	113	-1	333[a]	300	-33	371[a]	343	-28
176673	F	1/13/58	-	43.4	43.2	-0.2	11.9	12 1	+0.2	114	116	+2	347[a]	325	-22	377[a]	372	- 5
176674	F.	1/13/58	-	45.8	45.6	-0.2	13.2	13.3	+0.1	118	114	-4	351[a]	321	-30	389[a]	393	+ 4
Current Mill Average				43.6	43.3	-0.3	12.3	12.4	+0.1	115	112	-3	353	327	-26	384	372	-12

TABLE XL

MILL P -- 42-LB. LINERBOARD

176506	Fls	12/22/57	1	43.0	42.2	-0.8	13.0	12.5	-0.5	113	109	-4	339[a]	328	-11	392[a]	368	-24
176790	Fls	1/19/58	1	42.7	41.8	-0 9	13.5	12.7	-0.8	104	106	+2	302[a]	299	- 3	352[a]	354	+ 2
176791	Fls	1/21/58	1	42.9	42 0	-0 9	13.6	12.7	-0.9	106	108	+2	311[a]	307	- 4	361[a]	389	+28
Current Mill Average				42.9	42.0	-0.9	13.3	12.6	-0.7	108	108	0	317	311	- 6	368	370	+ 2

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit

Note: All "Current Mill Average" data are calculated from the totals of the individual readings.

COMPARISON OF INSTITUTE AND MILL DATA--JANUARY 1 THROUGH JANUARY 31, 1958 (continued)

TABLE XLI

MILL Q -- 42-LB LINERBOARD

Code No.	Finish	Date Made	Con No.	Basis Weight, lb			Caliper, points			Bursting Strength, p.s.i. gage			Elmendorf Tear, g./sheet					
													In			Across		
				IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.	IPC	Mill	Diff.
176696	FIS	1/ 2/58	2	42.1	43.0	+0.9	13 3	13.2	-0.1	132	126	-6	333[a]	348	+15	375[a]	401	+26
176697	FIS	1/15/58	2	42.1	43.2	+1.1	13.4	12.8	-0.6	129	123	-6	347[a]	362	+15	383[a]	436	+53
176698	FIS	1/16/58	2	42.3	43.0	+0.7	13.6	13	-0.6	125	119	-7	365[a]	369	+ 4	387[a]	441	+54
Current Mill Average				42.2	43.1	-0.9	13.4	13.0	-0.4	129	122	-7	348	360	+12	382	426	+44

TABLE XLII

MILL S -- 42-LB. LINERBOARD

176480	S.F	--------	7	42.8	43.0	-0.2	12.9	12.6	-0.3	106	106	0	379[a]	371	- 8	388[a]	415	+27
176484	S.F	12/19/57	7	43.3	42.5	-0.8	12.6	12.4	-0.2	106	111	+5	351	331	-20	401[a]	393	- 8
176639	S F	1/ 6/58	7	42.7	42.3	-0.4	12.6	12.5	-0.1	112	110	-2	335	338	+ 3	374[a]	384	+10
176708	S.F.	1/16/58	7	42.6	42.6	0.0	13.0	12.6	-0.4	109	107	-2	377	340	-37	389[a]	376	-13
Current Mill Average				42.8	42.6	-0.2	12.8	12.5	-0.3	108	108	0	360	345	-15	388	392	+ 4

TABLE XLIII

MILL R -- 47-LB DRUM LINERBOARD

No samples submitted

[a]This average includes the readings for one or more specimens which tore beyond the 3/8-inch limit

Note All "current mill average" data are calculated from the totals of the individual readings.